REMARKS

Rejection Under 35 U.S.C. § 112, Second Paragraph

In the Office Action of March 23, 2005, claim 2 was rejected under 35 U.S.C. § 112, second paragraph as allegedly unclear in the recitation of "immunogen" in claim 2. According to the Office Action, this term lacks an antecedent basis in claim 1, which recites an "anti-G17 immunogenic composition."

Applicant respectfully points out that one of ordinary skill would readily understand that the "immunogen" of claim 2 relates to the "immunogenic composition" of claim 1, which is an anti-G17 immunogenic composition. Furthermore, there is no requirement under the law, or the U.S. Patent and Trademark Office Regulations that there be an "ipsis verbis" correspondence between the claim terms and their support, in this case the antecedent basis in claim 1. Therefore, the rejection of claim 2 under 35 U.S.C. § 112, second paragraph should be withdrawn.

Rejection Under 35 U.S.C. § 102(a)

In the Office Action of March 23, 2005, claims 1-4 were rejected under 35 U.S.C. § 102(a) as allegedly anticipated by Watson et al. (1995) Int. J. Cancer 61: 233-240.

According to the Patent and Trademark Office, claims 1-4 are drawn to a method of treatment of gastrin related tumors, the method comprising administering to a mammal an immunogenic composition which induces antibodies that neutralize G-17 in vivo, wherein the tumors are colorectal adenocarcinomas expressing gastrin receptors. Further, according to the Patent and Trademark Office, Watson et al. disclose the treatment of nude mice bearing xenografts of colorectal cancer AP5 cells expressing gastrin/CCK-B receptors, with an anti-G17 immunogen that raised neutralizing antibodies specific for amidated G17 and glycine-extended G17, and showed inhibition of tumor growth. Thus, according to the Patent and Trademark Office, claims 1-4 are anticipated.

Applicants respectfully disagree.

Firstly, contrary to the assertion by the Patent and Trademark Office, the Watson et al. reference does not disclose an anti-G17 immunogen that raised neutralizing antibodies specific for glycine-extended G17.

Secondly, Watson et al. describes treatment of AP5 tumor cells, which are gastrin (G17)-stimulated tumor cells. See Watson et al., abstract: "Rabbit anti-G17:DT....antiserum completely reversed growth stimulated by human G17..." and "When AP5 was grown as a xenograft in nude mice, the sensitivity to the proliferative effect of human G17 was maintained." Thus, the AP5 tumors were gastrin-stimulated tumors.

There is no evidence in Watson et al. that the AP5 cells are glycine-extended gastrin-17-dependent tumors as required by claims 1-4. Therefore, the basis for the alleged anticipation of claims 1-4 by Watson et al. is erroneous and this rejection of claims 1-4 under 35 U.S.C. § 102(a) must be withdrawn.

Rejection Under 35 U.S.C. § 102(b)

In the Office Action of March 23, 2005, claims 1-5 were rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent 5,468,494 to Gevas et al. ("the '494 Patent").

According to the Patent and Trademark Office, the '494 Patent discloses immunogenic compositions of anti-gastrin 17 useful for controlling G17 in a patient by generating anti-gastrin antibodies and the use of such compositions for the treatment of gastrin-induced tumors. Further, the Patent Office asserts that the '494 Patent discloses at Col.1, lines 7-26, that anti-G17 antibodies can be used to treat cancer in which G17 can be involved and that these antibodies can be induced in the patient by active immunization of the disclosed immunogenic composition.

The Office Action goes on to assert that the method of the prior art comprises the same steps as the claimed invention: i.e. administering the anti-G17 immunogenic composition of the prior art to the same population; and thus inherently leading to the same treatment of gastrin-related tumors whose growth is stimulated by amidated G17. The Office Action further states that

> "...the active immunization produces antibodies which neutralize the physiological effects of amidated gastrin-17 appears to be the same as the prior art method. Therefore, according to the Office Action, it would be expected that the antibodies would bind and neutralize amidated and glycine-extended gastrin-17 because the immunogen against which the antibodies are raised comprises the amino acid sequence of the molecule." (emphasis added).

Applicants respectfully again point out that the pending claims recite a method of treatment of glycine-extended gastrin dependent tumors. Nowhere in the '494 Patent is there any disclosure of treatment of a glycine-extended gastrin dependent tumor. Furthermore, contrary to the assertion of the Patent Office, the populations treated with the anti-G17 immunogenic composition as disclosed in the '494 Patent and as specified in the present claims are not the same. The '494 Patent discloses treatment of diseases in which "gastrin 17 ("hG17") is involved (Col. 1, line 19). By contrast, the presently claimed invention relates to a method of treatment of a glycine-extended gastrin dependent tumor. These are two distinct and different tumor types.

Gastrin-17-dependent tumors respond to amidated gastrin which is bound by the CCK-B/gastrin receptor, whereas glycine-extended gastrin-17-dependent tumors respond to glycine-extended gastrin-17 which does not bind the CCK-B/gastrin receptor, and is thought to bind an as yet unknown receptor species. See Dockray, GJ., (2000) Gut 47: 747-748, at page 747, col. 2: "Neither progastrin nor Gly-

gastrins have a carboxy terminal amide group and therefore they do not have a high affinity for the gastrin-CCKB receptor..." and further in the same paragraph: "The precise receptors mediating the trophic actions of progastrin and Gly-gastrin remain uncertain." A copy of Dockray, 2000 is attached to this Amendment for the Examiner's convenience.

The assertion that glycine-extended gastrin exerts its effects through a receptor distinct from the CCK-B/gastrin receptor is also borne out by recent publications in the art: See for instance, Pannequin et al. J. Endocrinol. (2004) 181(2): 315-325. A copy of the abstract of this publication is also attached to this Amendment. The first sentence of the abstract states in relevant part: "...non-amidated forms [of gastrin] stimulate colonic mucosal proliferation via a novel, as yet uncharacterized receptor." This glycine-extended gastrin-binding receptor is responsible for the proliferative effect of glycine-extended gastrin on glycine-extended gastrin-dependent tumors. This effect is different from the stimulatory effect of amidated gastrin-17 on G17-dependent tumors, such as the AP5 tumors disclosed in the '494 Patent.

Thus, the mode of action of the method of claims 1-5 of the present invention, and the population of glycine-extended gastrin-dependent tumor cells treated by the present invention are different and distinct from the method for treating (amidated) gastrin-17-dependent tumors as disclosed in the '494 Patent. For this reason claims 1-5 of the present invention cannot be inherently anticipated by the disclosure of the '494 Patent. Therefore, the rejection of claims 1-5 under 35 U.S.C. § 102(b) as allegedly anticipated by the '494 Patent cannot stand and must be withdrawn.

Rejection Under 35 U.S.C. § 103(a)

In the Office Action of March 23, 2005, claims 1-5 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Watson et al (1995) in view of U.S. Patent 5,843,446 to Ladd et al. ("the '446 Patent").

According to the Patent and Trademark Office, Watson et al. (1995) discloses all the elements of claims 1-5 except the application of the method of treatment with the anti-G17 immunogen to humans having colorectal carcinomas. These deficiencies, the Office Action states, are made up in the teachings of the '446 Patent. Thus, according to the Patent Office, it would have been prima facie obvious for one of ordinary skill to apply the method of Watson et al. to the treatment of colorectal carcinomas in humans, as recited in claims 1-5 of the present application.

As explained above, neither Watson et al., nor the '446 Patent disclose the treatment of glycine-extended gastrin-dependent tumors. These tumors are distinct from the gastrin-dependent tumors stimulated by amidated gastrin (G17). In fact, it was not appreciated, or even suggested prior to the present invention that these glycine-extended gastrin-dependent tumors were treatable by the methods of the present invention.

In fact, nowhere in the disclosures of either Watson et al. or the '446 Patent is there any disclosure of a glycine-extended gastrin-dependent tumor, much less any disclosure of the treatment of such tumors according to the present invention. Therefore, the combination of the disclosures of Watson et al. and the '446 Patent fails to reach the presently claimed invention and must be withdrawn.

REQUEST FOR RECONSIDERATION

For all the above reasons, Applicants respectfully request reconsideration of the rejection of claims 1-5 of the present application and allowance of these claims.

TIME OF TRANSMITTAL OF AMENDMENT

This Amendment is being filed within five months of the mailing of the first Office Action on the merits.

Applicant petitions for a two month extension of time in connection with the filing of this Amendment. A fee for a two month extension of time is due in connection with this filing according to 37 C.F.R. §1.136(a)(2).

The Commissioner is hereby authorized to charge the above-specified fee and any additional fee necessary to maintain pendency of this application, now or during future prosecution of this application to Deposit Account No. 23-1703.

Dated: August 23, 2005

Respectfully submitted,

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